

10/521641, 61

RECD PCT/PTO 04 JAN 2005

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number  
**WO 2004/008155 A1**

(51) International Patent Classification<sup>7</sup>: G01P 1/00,  
1/02, F16B 5/02, G01D 11/30

(21) International Application Number:

PCT/US2003/022135

(22) International Filing Date: 16 July 2003 (16.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/396,587 17 July 2002 (17.07.2002) US

(71) Applicant (for all designated States except US): THE TIMKEN COMPANY [US/US]; 1835 DUEBER AVENUE S.W., CANTON, OH 44706 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DENNY, Wayne V. [US/US]; 3625 BALDWIN AVENUE, ALLIANCE, OH 44601 (US). SMITH, Richard [US/US]; 6913 SALERNO STREET NW, CANTON, OH 44718 (US). REHFUS, Kevin [US/US]; 7887 PORTVIEW AVENUE, NORTH CANTON, OH 44720 (US).

(74) Agent: BOESCHENSTEIN, Edward A.; POLSTER, LIEDER, WOODRUFF & LUCCHESI, L.C., 763 SOUTH NEW BALLAS ROAD, ST. LOUIS, MO 63141 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

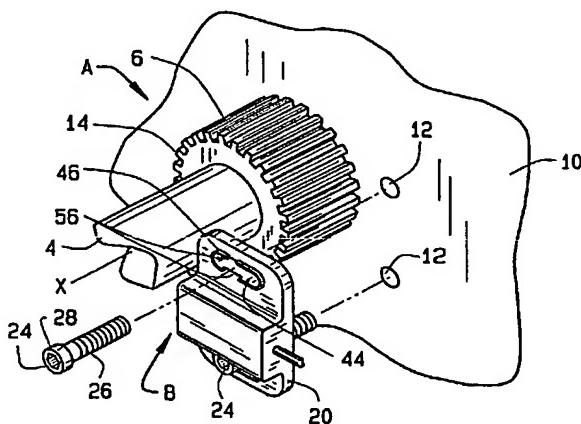
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SPEED SENSOR AND METHOD OF ATTACHING THE SAME



(57) Abstract: A speed sensor (B, C) produces a signal that reflects the angular velocity of a shaft (4) which rotates in a case (2) having a mounting surface (10), beyond which the shaft projects to provide a target (6), and threaded holes (12) which open out of the mounting surface. The speed sensor includes a housing (20) and a sensing element (22) which is embedded in the housing. The housing, which is formed from a deformable material, has slots (44, 60) which align with the threaded holes in the case, and receive screws (24, 66) which thread into the holes to secure the speed sensor to the case. The speed sensor is positioned such that the proper air gap exists between its sensing element and the target. The screws, which extend through the slots, produce indentations (56, 74) in the deformable material of the housing, and these indentations receive the screws, so that the position of the sensor is fixed. Thus, the sensor, if removed, may be reinstalled in the same location.

WO 2004/008155 A1